

What is Claimed is:

1. A strengthened blade tape measure, comprising:

a tape casing having a receiving cavity and a guider opening communicating with said receiving cavity;

5 a retraction unit supported in said receiving cavity; and

a ruler blade, having an inner end attached to said retraction unit and an outer end stopped at said guiding opening, adapted to slidably fold between a storage position and a measuring position, wherein at said storage position, said ruler blade is retracted to receive in said receiving cavity in a coil flattened configuration manner via said retraction unit, and at said measuring portion, said outer end of said ruler blade is slidably pulled to extend said ruler blade in a concave-convex configuration out of said receiving cavity through said guider opening,

10 said ruler blade having a width in said flattened configuration thereof having a dimension within a range of 41-42mm, a height in said concave-convex configuration thereof having a dimension within a range of 9-12mm, and a thickness thereof having a dimension at least 2mm, such that said ruler blade is capable of standing out from said tape casing with a measuring length at least 10 feet in a self-sustaining manner so as to prevent said ruler blade from buckling by its own weight.

15 2. The strengthened blade tape measure, as recited in claim 1, wherein said width of said ruler blade in said flattened configuration is 41.27mm and said height of said ruler blade in said concave-convex configuration is 11.34mm.

20 3. The strengthened blade tape measure, as recited in claim 1, wherein said width of said ruler blade in said flattened configuration is 41.29mm and said height of said ruler blade in said concave-convex configuration is 11.03mm.

25 4. The strengthened blade tape measure, as recited in claim 1, wherein said width of said ruler blade in said flattened configuration is 41.29mm and said height of said ruler blade in said concave-convex configuration is 9.75mm.

5. The strengthened blade tape measure, as recited in claim 1, wherein said ruler blade has a longitudinal central portion and two longitudinal side portions integrally extended from two sides of said central portion of said ruler blade respectively, wherein each of said side portions of said ruler blade has a curvature smaller than a curvature of said central portion of said ruler blade, wherein said central portion of said ruler blade has a width in said concave-convex configuration thereof having a dimension within a range of 20-22mm, a height in said concave-convex configuration thereof having a dimension within a range of 3-4mm.

10 6. The strengthened blade tape measure, as recited in claim 2, wherein said ruler blade has a longitudinal central portion and two longitudinal side portions integrally extended from two sides of said central portion of said ruler blade respectively, wherein each of said side portions of said ruler blade has a curvature smaller than a curvature of said central portion of said ruler blade, wherein said central portion of said ruler blade has a width in said concave-convex configuration thereof having a dimension within a range of 20-22mm, a height in said concave-convex configuration thereof having a dimension within a range of 3-4mm.

15 7. The strengthened blade tape measure, as recited in claim 3, wherein said ruler blade has a longitudinal central portion and two longitudinal side portions integrally extended from two sides of said central portion of said ruler blade respectively, wherein each of said side portions of said ruler blade has a curvature smaller than a curvature of said central portion of said ruler blade, wherein said central portion of said ruler blade has a width in said concave-convex configuration thereof having a dimension within a range of 20-22mm, a height in said concave-convex configuration thereof having a dimension within a range of 3-4mm.

20 25 8. The strengthened blade tape measure, as recited in claim 4, wherein said ruler blade has a longitudinal central portion and two longitudinal side portions integrally extended from two sides of said central portion of said ruler blade respectively, wherein each of said side portions of said ruler blade has a curvature smaller than a curvature of said central portion of said ruler blade, wherein said central portion of said ruler blade has a width in said concave-convex configuration thereof having a dimension within a range of 20-22mm, a height in said concave-convex configuration thereof having a dimension within a range of 3-4mm.

9. The strengthened blade tape measure, as recited in claim 5, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 30mm and a side projecting angle of said side portion of said ruler blade is 18.43^0 .

10. The strengthened blade tape measure, as recited in claim 6, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 30mm and a side projecting angle of said side portion of said ruler blade is 18.43^0 .

15. The strengthened blade tape measure, as recited in claim 7, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 30mm and a side projecting angle of said side portion of said ruler blade is 18.43^0 .

20. The strengthened blade tape measure, as recited in claim 8, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 30mm and a side projecting angle of said side portion of said ruler blade is 18.43^0 .

25. The strengthened blade tape measure, as recited in claim 5, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side

portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler blade is 12.3^0 .

14. The strengthened blade tape measure, as recited in claim 6, wherein said 5 curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler 10 blade is 12.3^0 .

15. The strengthened blade tape measure, as recited in claim 7, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler 15 blade is 12.3^0 .

16. The strengthened blade tape measure, as recited in claim 8, wherein said curvature of said central portion of said ruler blade is defined that a central projecting 20 radius of said central portion of said ruler blade is 15mm and a central projecting angle of said central portion of said ruler blade is 84^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler blade is 12.3^0 .

25 17. The strengthened blade tape measure, as recited in claim 5, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 18mm and a central projecting angle of said central portion of said ruler blade is 74^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler 30 blade is 11.5^0 .

18. The strengthened blade tape measure, as recited in claim 6, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 18mm and a central projecting angle of said central portion of said ruler blade is 74^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler blade is 11.5^0 .

19. The strengthened blade tape measure, as recited in claim 7, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 18mm and a central projecting angle of said central portion of said ruler blade is 74^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler blade is 11.5^0 .

15 20. The strengthened blade tape measure, as recited in claim 8, wherein said curvature of said central portion of said ruler blade is defined that a central projecting radius of said central portion of said ruler blade is 18mm and a central projecting angle of said central portion of said ruler blade is 74^0 , wherein said curvature of each of said side portion of said ruler blade is defined that a side projecting radius of said side portion of said ruler blade is 45mm and a side projecting angle of said side portion of said ruler blade is 11.5^0 .